

NON-PUBLIC?: N  
ACCESSION #: 9003290123

LICENSEE EVENT REPORT (LER)

FACILITY NAME: Oyster Creek, Unit 1 PAGE: 1 OF 4

DOCKET NUMBER: 05000219

TITLE: Manual Rx Scram Due to Spurious Actuation of the ARI System  
Resulting from Personnel Error in Operating Hand-Held Radio in  
Restricted Area.

EVENT DATE: 02/20/90 LER #: 90-004-00 REPORT DATE: 03/21/90

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: POWER LEVEL:

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:

NAME: Michael Godknecht, Plant Engineering TELEPHONE: (609) 971-4189

COMPONENT FAILURE DESCRIPTION:

CAUSE: SYSTEM: COMPONENT: MANUFACTURER:  
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On February 20, 1990, while performing a surveillance on a reactor vessel level instrument, an Instrument & Controls (I&C) technician keyed a hand-held radio near the analog trip units for the Alternate Rod Injection (ARI) System causing the system to actuate due to radio frequency interference (RFI). Control room operators noted that air operated valves supplied from the Scram Air System were repositioning and that control rods were drifting into the core. The operators initiated a manual reactor scram as required by procedure due to the drifting control rods. The cause of this occurrence has been attributed to personnel error by the technician performing the surveillance procedure. The access door to the area where the ARI System components are located is well marked with reference to the restriction on the use of radios in the area. This event is determined to have minimal safety significance

because a manual scram was initiated by the operators within 5 seconds of rod movement. Chemistry samples indicate that no fuel damage resulted from this event. The use of radios by I&C technicians must now be approved by the technician's supervisor. Appropriate site personnel will receive training on this event and an investigation will be conducted into minimizing the ARI System's sensitivity to RFI.

END OF ABSTRACT

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DATE OF OCCURRENCE

The condition described within the report occurred on February 20, 1990.

IDENTIFICATION OF OCCURRENCE

While performing a surveillance on the reactor vessel level instrumentation, an Instrument & Controls (I&C) technician keyed a hand-held radio (EIIS-FI) near the analog trip units for the Alternate Rod Injection (ARI) System, causing the System to actuate and bleed off the pressure in the Scram Air System (EIIS-LD). As a result, control rods (EIIS-AA ROD) started to drift into the core and control room operators manually scrammed the reactor. This occurrence is considered reportable under 10CFR50.73(a)(2)(iv).

CONDITIONS PRIOR TO OCCURRENCE

The reactor was at 100% power, with a generator load of approximately 647 megawatts electric.

DESCRIPTION OF OCCURRENCE

On February 20, 1990 at 1102 hours, I&C technicians were performing a high/low level test and calibration surveillance on a reactor vessel level instrument. During the performance of the surveillance, a hand-held radio was used near the reactor high pressure analog trip units for the Alternate Rod Injection System (ARI), causing them to actuate. An alarm indicating that the ARI System had initiated was received in the control room, and the control room operators observed that air operated valves supplied from the Scram Air System were repositioning to the scram position and that control rods were drifting into the core. The operators observed rods drifting in, as a result of this ARI initiation, and quickly initiated a manual reactor scram as required by procedure. No safety systems were initiated during this event other than the Reactor Protection System (RPS) (EIIS-JC) which was manually initiated.

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#### APPARENT CAUSE OF OCCURRENCE

The cause of this occurrence has been attributed to personnel error on the part of the I&C technicians performing the surveillance procedure. A technician was verifying the reset of the various relays tested by the surveillance procedure and reporting these verifications to another technician via hand-held radio. One of the relays to be verified is in an area where the use of radios is restricted. When verifying the position of this relay, the technician forgot about the restriction and keyed his radio to report the condition of the relay. When the radio was keyed, the radio frequency interference (RFI) caused the ARI system to spuriously actuate. Actuation of the ARI system vented the Scram Air System causing the control rods to drift into the core. The access door to the area where the ARI System components are located is well marked with reference to the restriction on the use of radios in the area.

#### ANALYSIS OF OCCURRENCE AND SAFETY SIGNIFICANCE

The Alternate Rod Injection System is designed to backup the Reactor Protection System in the event that the Reactor Protection System fails to function during conditions requiring a reactor scram. The ARI System is actuated by a high reactor pressure signal or by Lo-Lo reactor vessel water level. When this system is actuated, valves open to depressurize the Scram Air System, which will vent off the scram valves for the individual control rods. As the scram valves start to reposition, control rods will drift into the core until the valves fully open, at which point the rods will scram. During this event, the Alternate Rod Injection System and the Reactor Protection System performed as designed. No other safety system was initiated.

This event is determined to have minimal safety significance. Although control rods were inserted in a random pattern due to the venting of the Scram Air System, a manual scram was initiated by the operators within 5 seconds of the first rod drifting into the core. Random rod drift and insertion of multiple rods can lead to core damage due to abnormal power peaking; however, chemistry samples indicated that no fuel damage resulted from this occurrence. This event would have been less significant at any lesser power level.

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#### CORRECTIVE ACTION

## Short Term

The use of hand-held radios by I&C technicians when performing any maintenance or surveillance function must be approved by the technician's supervisor. The supervisor will evaluate the locations where the job is being performed and determine if the use of hand-held radios is permissible.

## Long Term

1. An investigation will be conducted into the feasibility of shielding the ARI analog equipment from radio frequency interference, or replacing the components involved with equipment having RFI rejection capabilities.
2. The development of a site administrative procedure controlling the use of hand-held radios will be evaluated.
3. This report will be made required reading for appropriate station personnel and consideration will be made to including the problem with RFI on sensitive electronic equipment in General Employee Training.

## SIMILAR EVENTS

None.

ATTACHMENT 1 TO 9003290123 PAGE 1 OF 1

GPU Nuclear Corporation  
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609 971-4000  
Writer's Direct Dial Number:

March 21, 1990

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station  
Docket No. 50-219

Licensee Event Report

This letter forwards one (1) copy of Licensee Event Report (LER) No. 90-04.

Very truly yours,

E. E. Fitzpatrick  
Vice President & Director  
Oyster Creek

EEF:BDe:dmd  
(/docs/dmd/0705A:1)  
Enclosures

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NRC Resident Inspector  
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